

ABSTRACT OF THE DISCLOSURE

A method and corresponding device for determining the phase- and/or amplitude data of an electromagnetic wave. In order to bring about the spatial depth resolution of the image data obtained, the method according to the invention comprises the following steps: an electromagnetic wave is beamed onto the surface of a photonic mixed element comprising at least one pixel, the pixel having at least two light-sensitive modulation light gates G_{am} and G_{bm} and associated accumulation gates G_a and G_b ; modulation light gate voltages $U_{am}(t)$ and $U_{bm}(t)$, which are configured as $U_{am}(t) = U_o + U_m(t)$ and $U_{bm}(t) = U_o - U_m(t)$, are applied to the modulation light gates G_{am} and G_{bm} ; a direct voltage, whose magnitude is at least the same as that of the total of U_o and the amplitude of the modulation voltage $U_m(t)$, is applied to the accumulation gates G_a and G_b ; the charge carriers produced in the space charge region of the modulation light gates G_{am} and G_{bm} by the incident electromagnetic wave are subjected, as a function of the polarity of the modulation light gate voltages $U_{am}(t)$ and $U_{bm}(t)$, to the potential gradient of a drift field and drift to the corresponding accumulation gate G_a or G_b ; and the charges q_a and q_b which have drifted to the accumulation gates G_a and G_b , respectively, are diverted. The corresponding photonic mixed element has at least one pixel which comprises at least two light-sensitive modulation light gates (G_{am} , G_{bm}) and accumulation gates (G_a , G_b) which are associated with the modulation light gates and are partitioned with respect to the incident electromagnetic wave. A plurality of photonic mixed elements can be assembled to form an array.